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09/917,818	07/31/2001	Andrew J. Davenport	YOR920010335	1735

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EXAMINER

FELTEN, DANIEL S

ART UNIT	PAPER NUMBER
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3624

DATE MAILED: 04/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/917,818**

Applicant(s)  
**Lee**

Examiner  
**Daniel Felten**

Art Unit  
**3624**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 28, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

1  
2 1. The receipt of the amendment filed January 28, 2003 amending claim 11 is  
3 acknowledged. Claims 1-11 are pending in the application and are presented to be examined  
4 upon their merits.  
5

### *Response to Arguments*

6  
7

8 2. Applicant's arguments filed January 28, 2003 have been fully considered but they are  
9 not persuasive. References, in determining obviousness are not read in isolation but for what  
10 they fairly teach in combination with prior art as a whole, and thus patent assignee's reference-  
11 by-reference attack on prior art to demonstrate non-obviousness is not persuasive  
12 (Photoelectric sensing system) Banner engineering v. Tri-Tronics Co. Inc., 29 USPQ 1392  
13 1389 (CAFC 1993 unpub) citing in re Merck, 231 USPQ 375 (CAFC 1986).

14 It is also respectfully submitted that references are evaluated by what they suggest to  
15 one versed in the art, rather than their specific disclosure [see In re Bozek, 163 USPQ 545  
16 (CCPA 1969)]. In this case, the primary reference, Sandholm, discloses a computer  
17 implemented method for optimally selecting sets of items having associated valuations the  
18 contemplates its use for solving the cost minimization problem within a bid set in a reverse  
19 combinatorial auction. The secondary reference, Takriti, discloses a tool for forecasting the  
20 spot market-prices of electrical power and trading transaction at different delivery points using  
21 statistical modeling demand constraints to manage risk more effectively. The 35 USC 103

1 rejection set for the above provide reasoning for the combinations of references and resolve the  
2 level of ordinary skill in the business art.

3 In response to applicant's analysis of the references, the examiner respectfully submits  
4 that one can not show obviousness by attacking references, individually where, as here the  
5 references are based upon the combination of references. Specifically, applicant discusses how  
6 Takriti is not relevant to the claimed invention and how a fundamental reworking of the set  
7 covering model to incorporate business constraints is required. The deficiencies of the  
8 Sandholm reference and its relevance to applicants' invention was addressed in the first Office  
9 action dated October 24, 2002. A discussion of these deficiencies are addressed identically  
10 below along the relevancy of how Takriti is used to provide statistical modeling constraints to  
11 the Sandholm reference.

12  
13  
14 ***Claim Rejections - 35 USC § 103***

15 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
16 obviousness rejections set forth in this Office action:

17 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in  
18 section 102 of this title, if the differences between the subject matter sought to be patented and the prior art  
19 are such that the subject matter as a whole would have been obvious at the time the invention was made to a  
20 person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be  
21 negated by the manner in which the invention was made.

22  
23 4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US  
24 6,272,472) in view of Takriti et al (hereinafter "Takriti", US 5,974,403).

1 Sandholm discloses a method for identifying a cost minimizing bid set for reverse  
2 combinatorial auctions (see Sandholm, col. 1, ll. 46-65), the method comprising: introducing a  
3 decision variable for each bid (see Sandholm, col. 6, ll. 18-44); introducing a counting variable  
4 to indicate whether bids from a supplier are chosen in an optimal bid set (see Sandholm, col. 1,  
5 ll. 66 to col. 2, ll. 7); and introducing dummy variables to ensure existence of feasible  
6 solutions (see Sandholm, col. 16, ll. 20-22); However, Sandholm fails to teach modeling  
7 demand constraints for each item using the bid variables.

8 Takriti teaches a tool for forecasting the spot-market prices of electrical power and  
9 trading transactions at different delivery points using statistical modeling demand constraints  
10 to manage risk more effectively and determine electrical power cost minimization ( see Takriti,  
11 col. 3, ll. 29 to col. 4, ll. 11; and col. 9, ll. 29+). Since, Sandholm contemplates a reverse  
12 combinatorial auction wherein a minimized cost is desirable (see Sandholm, col. 1, ll. 62 to  
13 col. 2, ll. 7), it would have been obvious for an artisan of ordinary skill at the time of then  
14 invention of Sandholm to integrate the modeling of demand constraints, as taught by Takriti  
15 to provide the bidders an alternative means to provide optimal allocation in a combinatorial  
16 auction. Thus such a modification would have constituted an obvious expedient well within the  
17 ordinary skill in the art.

18 Sandholm fails to disclose modeling minimum and maximum numbers of suppliers  
19 based on the counting variables. This is taught by Takriti (see Takriti, col. 9, ll. 49+). It  
20 would have been obvious for an artisan of ordinary skill in the art to employ the teachings of  
21 Takriti to the Sandholm invention because an artisan of ordinary skill in the art would  
22 recognize the importance in the number of suppliers to produce a minimum of cost.

1           formulating an object with the given cost level as a constraint introducing price  
2       modifications to handle the formulated objective of choosing bids that arrive early.  
3

4       5.       Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
5       Sandholm (US 6,272,473) as modified by Takriti et al (US 5,974,403) as applied to claim 1  
6       above, and further in view of Rackson et al (US 6,415,270 B1). The teachings of Sandholm as  
7       modified by Takriti have been discussed above.

8           Sandholm as modified by Takriti fails to teach the auction is an single round and/or the  
9       auction is a multiple round auction. Rackson discloses both single and multiple round auctions  
10      (see Rackson, Abstract). Since Sandholm as modified by Takriti are related to solving  
11      combinatorial auction-type problems, it would have been obvious for an artisan of ordinary  
12      skill at the time of the invention to employ the teachings of Rackson to the teachings of  
13      Sandholm as modified by Takriti because the teachings of utilizing a multi-auction system to  
14      detect bids at a plurality of remote auction services for an item in order to replicate the bid at  
15      each of the remote auction services, as found in the Rackson invention, would constitute an  
16      obvious extension to the teachings of Sandholm as modified by Takriti inasmuch as Sandholm  
17      as modified by Takriti would have sought to perform an auction or auctions to provide  
18      particular items (or set of items) to bidders. Thus to employ single or multiple round auctions  
19      would have been an obvious expedient well within the ordinary skill in the art.

20  
21       6.       Claims 4 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
22       Sandholm (US 6,272, 473) in view of Dwande et al (hereinafter "Dwande", US 6,321,132 B1)  
23       and Aggarwal et al (hereinafter "Aggarwal").

1 **Regarding claim 4:**

2 Sandholm contemplates a method for implementing a reverse combinatorial auction in which  
3 items of varying quantities are purchased (see Sandholm, col. 1, ll. 62-65), defining one or  
4 more parameters for the auction (see Sandholm, col. 1, ll. 66 to col. 2, ll. 7); accepting bids  
5 for a plurality of items in the auction (see Sandholm, col. 1, ll. 40+); and determining a cost-  
6 minimizing bid set based on a implementation of the computer-implemented representation (see  
7 Sandholm, col. 3 , ll. 9+).

8 Sandholm fails to disclose creating a set-covering formulation from the bids. Dawande  
9 teaches the use of set covering formulation approach as a solution for slab covering design,  
10 which is as follows:

11 Given a base set S and a collection, F (or F subsets of S), find a collection B\* (or B\* subsets of F)  
12 such that this collection covers all the members of S and that the number of subsets in this  
13 collection is minimum (see Dawande, col. 6, ll. 37+).  
14

15 It would have been obvious for an artisan or ordinary skill at the time of the invention  
16 of Sandholm to employ the set covering method taught by Dawande into the teachings of  
17 Sandholm because an artisan at the time of the invention of Sandholm would recognize the  
18 advantage of using the set covering method in a combinatorial auction to minimize  
19 computational cost and optimize valuation of bid sets. Thus to employ the set covering  
20 formulation as taught by Dawande into the Sandholm invention would have provided and an  
21 alternative means to optimize valuation of bid sets and thus have been an obvious extension to  
22 the teachings of Sandholm as well as an obvious expedient well within the ordinary skill in the  
23 art.

1 Sandholm fails to disclose adding predetermined business rules as a constraint to the  
2 set-covering formulation. Dawande teaches a set of "compatibility conditions" that are used in  
3 the set-covering formulation as constraints. Aggarwal teaches using business rules as  
4 constraints to set-covering formulation, automatically generating a computer-implemented  
5 representation of the set-covering formulation as constrained by the business rules;(see  
6 Aggarwal, col. 4, ll. 24+). It would have been obvious for an artisan of ordinary skill in the  
7 art at the time of the Sandholm invention to employ certain constraints (or business rules) as  
8 part of the set-covering formulation to further define item/bid sets. Thus such a modification  
9 would have been an obvious expedient well within the ordinary skill in the art.

10  
11 **Regarding claims 6-11:**

12 Sandholm in view of Dwande and Aggarwal teaches all the limitations within the above  
13 mentioned claims which further defines the use of a set covering method (see Dwande, col. 6,  
14 ll. 36+). The reasons for implementation of the set-cover formulation method to the particular  
15 problem of combinatorial auction as taught in Sandholm has been addressed above in claim 4  
16 and is further used to reject claims 6-11.

17  
18 7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandholm (US  
19 6,272, 473) as modified by Dwande et al (hereinafter "Dwande", US 6,321,132 B1) and  
20 Aggarwal et al (hereinafter "Aggarwal") as applied to claim 4 above, and further in view of  
21 Rackson et al.

22 Since Sandholm as modified by Dwande contemplate solving a reverse combinatorial  
23 auction-type problem (see Sandholm, col. 1, ll. 60-65), it would have been obvious for an



1 artisan of ordinary skill at the time of the invention to employ the teachings of Rackson to the  
2 teachings of Sandholm as modified by Dwande because the teachings of utilizing a multi-  
3 auction system to detect bids at a plurality of remote auction services for an item in order to  
4 replicate the bid at each of the remote auction services, as found in the Rackson invention,  
5 would constitute an obvious extension to the teachings of Sandholm as modified by Dwande  
6 inasmuch as Sandholm as modified by Dwande would have sought to perform single and  
7 multiple auctions to sell particular items (or set of items) to bidders. Thus to employ single or  
8 multiple round auctions would have been an obvious expedient well within the ordinary skill in  
9 the art.

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*Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Daniel S. Felten** whose telephone number is (703) 305-0724. The examiner can normally be reached between the hours of 7:00AM to 5:30PM Monday-Thursday. Any inquiry of a general nature relating to the status of this application or its proceedings should be directed to the Customer Service Office (703) 306-5631, or the examiner's supervisor **Vincent Millin** whose telephone number is (703) 308-1065.

10. Response to this action should be mailed to:

Commissioner of Patents and Trademarks

1 Washington, D.C. 20231

2  
3 for formal communications intended for entry, or (703) 305-0040, for informal or draft  
4 communications, please label "Proposed" or "Draft".

5 Communications via Internet e-mail regarding this application, other than those under 35  
6 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be  
7 addressed to [daniel.felten@uspto.gov].

8 All Internet e-mail communications will be made of record in the application file. PTO  
9 employees do not engage in Internet communications where there exists a possibility that  
10 sensitive information could be identified or exchanged unless the record includes a properly  
11 signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly  
12 set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and  
13 Trademark on February 25, 1997 at 1 195 OG 89.

14  
15 

16  
17 **DSF**  
18 **April 17, 2002**

  
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